

Draft Paper

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Lack of Evidence as Evidence: The Case of Air Pollution in Turkey

**Paper presented at
The 2012 Berlin Conference on the Human Dimension of
Global Environmental Change:
Evidence for Sustainable Development
October 5-6, 2012**

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Abstract

Environmental issues are in a constant interaction with social, economic, cultural, administrative and political variables that affect each other in a number of ways. As a result, environmental problems are complex problems and their solutions require a holistic approach. In parallel, sustainable development, as an environmental policy principle and objective promotes policy integration to deal with complexity. In this context, data, knowledge and evidence gathering activities play a major role in environmental policy process, from problem definition to selection of alternatives and policy implementation. It is impossible to develop a holistic approach and solve environmental problems without resorting to facts. However, there is not a straightforward line between the evidence, environmental policies and policy change. According to interpretative approaches scientific evidence is socially constructed, and subject to a number of challenges by competing theories and methods. Policy process is not a gentlemen's business where scientific evidence is used to support political arguments and to legitimize a course of action, rather it is frequently disregarded, side-lined or even discredited if it challenges established practices and vested interests. However, this paper does not aim to focus on the social construction of evidence, but to the establishing a mechanism for the data collection. Public policies involve actions and inaction of governments and inaction demonstrates the concern of public authorities'. By focusing on problems in the development of air quality monitoring systems in Turkey, the paper argues that lack of a sufficient data gathering system is itself a sign of inaction or non-decision. In this case, lack of evidence also counts as an instrument of power, because scientific ambiguity or lack of evidence is used as an instrument of power to preserve status quo and contributes to sustenance of environmental problems, like air pollution, with an extra effect on every stage of policy process.

Introduction

Environmental issues are in a constant interaction with social, economic, cultural, administrative and political variables that affect each other in a number of ways. As a result, environmental problems are complex problems and their solutions require a holistic approach. In parallel, sustainable development, as an environmental policy principle and objective promotes policy integration to deal with complexity. In this context, evidence has a significant role in environmental policy process, from problem definition to selection of alternatives and policy implementation. It is impossible to develop a holistic approach and solve environmental problems without having a comprehensive understanding of problems and one need to resort facts to do so. However, there is not a straightforward line between the evidence, environmental policies and policy change. According to interpretative approaches scientific evidence is socially constructed, and subject to a number of challenges by competing theories and methods. Policy process is not a gentlemen's business where scientific evidence is used solely to support political arguments and to legitimize a course of action, rather it is frequently disregarded, side-lined or even discredited if it challenges established practices and vested interests. However, this paper does not aim to focus on the social construction of evidence as such, but focuses on problems of air quality monitoring and data collection network in Turkey and aims to analyse those problems from a non-decision/inaction perspective.

In this context the following section will discuss the role of evidence in environmental policy and then the role of inaction and non-decisions in policy process will be outlined. The third section will be devoted to legal and institutional development of air quality policies in Turkey and then the state of Turkey's air quality monitoring system will be analysed. In the rest of paper, Turkey's problems with monitoring systems and its impact on air quality policies will be discussed. In particular, authorities' attitudes to

evidence and the role of evidence in environmental policy will be assessed with reference to recent developments.

Overall, having a comprehensive air quality monitoring and data collection network is a necessary, but not sufficient, condition of environmental policy success at every stage of policy process from problem definition to selection of alternatives and evaluation of policy outcomes. However, authorities do not always act, sometimes remain indifferent to problems. Public policies involve actions and inaction of governments and inaction demonstrates public authorities' attitudes to environmental problems. By focusing problems in air quality monitoring systems in Turkey, this paper argues that lack of a proper air quality monitoring and delays in establishing a proper data collection system is itself a sign of inaction or non-decision. In this case, lack of evidence also counts as an instrument of power, because scientific ambiguity or lack of evidence is used as an instrument of power to preserve status quo. Crucial problems like air pollution are not defined and targeted due to this strategy of inaction by public authorities which in turn contributed to sustenance of environmental problems to large extent.

1. The Role of Evidence in Environmental Policy

Use of evidence in policy making has a long history that could be traced to earlier civilizations. However, production and use of policy-relevant knowledge in a systematic manner has accelerated in the period following the industrial revolution. Complex problems of industrial societies have accelerated the production and use of systematic knowledge on policy process and the twentieth century witnessed the institutionalisation of social sciences and emergence of some professions with systematic knowledge on this processes (Dunn, 2004, 34-43).

Evidence based policy making has become commonplace for many western governments and became a gold standard in terms of public policy making and using evidence was assumed to be the safest way to ensure policy success (McConnell, 2010, 128). One can come across a number of statements from politicians on the merits of evidence-based policy making. When we have a look at the pioneering texts in the field, for instance, Harold Lasswell refers to a policy orientation in improving the concrete content of the information and the interpretations available to policy makers. Lasswell refers to intelligence needs of Cold War era and defends the development of a new orientation to meet those demands and labels this orientation as policy sciences of democracy (Lasswell, 1951, 3-5).

Indeed, from a mainstream account, policy analysis seeks to create, transfer and communicate knowledge about and in the policy process. Because the effectiveness of policy making depends in part on the availability of policy relevant information, the communication and use of policy analysis are essential (Dunn, 2004, 33). Since some of those terms are used interchangeably, Bardach's definition of data, information and evidence provides a comprehensive account of those terms. Data are facts about the world; information is data that has meaning in the sense that it can help you sort the world into different logical or empirical categories. Evidence is information that effects the existing beliefs of important people about significant features of the problem you are studying and how it might be solved or mitigated (Bardach, 2005, 10-11). Thus, evidence is the most refined of all and has a certain impact on policy makers.

Environmental policy is a relatively new area of public policy and scientific findings play a major role in the development of environmental policy. According to Bardach, you need evidence to assess the nature and extent of the problems you are trying to define,

assess the particular features of the concrete policy situations you are engaged in studying and assess policies that have been thought to have worked effectively in situations apparently similar to your own, in other jurisdictions or at other times (Bardach, 2005, 11). In all those accounts, there is a certain role for the interpretation of facts.

Although a sound environmental policy needs strong evidence, the first step requires data collection and the case of air pollution needs data sets that measure the air quality in a certain period of time. Evidence based research needs reliable data for the definition of problems and develops devices for the solution of problems for the first instance. Findings of scientists, for instance in the case of transboundary acidification, hole in the ozone layer and climate change all contributed to development of an understanding of environmental problems, and their causes and consequences. Development of sound pollution monitoring systems played a major facilitative role in this process and data collection, knowledge and evidence creation activities played a significant role in environmental policy process, from problem definition to selection of alternatives and policy implementation. This is especially the case in formation and strengthening of international environmental regimes.

One can also argue that there is not a straightforward link between the evidence, environmental policies and environmental policy outcomes. According to interpretative approaches scientific evidence is socially constructed, and subject to a number of challenges by competing theories and methods. Policy process is not a gentlemen's business where scientific evidence is used solely to support political arguments and to legitimize a course of action. Rather, scientific evidence is frequently disregarded, sidelined or even discredited if it challenges established practices and vested interests. Furthermore, data does not speak itself, needs someone to interpret them and this makes the politics of evidence, and analysis of meaning vital issues for both academics and policy analysts.

However, this tendency does not make evidence ever less important, evidence still counts but the politics of evidence deserves more attention. The process through which evidence is used plays a decisive role in this political struggle and the collection, creation and use of evidence needs a detailed scrutiny.

In this paper, I would like to go a step back. All stakeholders, whether to manipulate, discredit or use, needs a set of data to interpret and through this interpretation of data, pieces of information and evidence comes to the fore. In fact, we are not talking about the later phases of environmental policy, but the first phase of data collection and without a sound data collection infrastructure it is almost impossible to have sound evidence that expected to shape environmental policies. Deep down in the process, one cannot define a problem without resorting to a set of reliable data. Therefore, collection of raw data stands as the primary precondition. In this context, lack of reliable and comprehensive data, due to a lack of relevant monitoring systems, is a major problem for environmental policy. What happens in the lack of a relevant monitoring system is not a mystery, pollution becomes a non-issue. Authorities cannot detect and diagnose the problem, because there no problem exists to be solved. Clean air policies need data sets to identify problem areas, develop strategies to prevent pollution and monitor the implementation. One, whether to manipulate, discredit or use, needs a data set to inform the rest of the policy process.

Then why a government does not prefer to develop a proper monitoring system to support its decision system for environmental policy-making and implementation? In a similar fashion, why governments choose to monitor certain pollutants and not others? Why governments hide certain evidence from the public at large and try to charge those scientists, officials and journalists that share pollution figures and health statistics and do it in the name of national security or preventing panic in the public? Overall, do governments really aim to solve the problem as such or do they just behave “as if” they do something to legitimise their position? From this point on Turkish governments’ attitude to environmental data will be discussed with reference to non-decisions and inaction as a form of deliberate public policy.

2. Inaction and Non-Decisions as Evidence and as an Act of Power

Public policies involve actions and inaction of governments and inaction demonstrates the concern of public authorities’. Policies are not only comprised of what governments do. In some occasions power resides as much in the capacity to command inaction as to command action. According to Bachrach and Baratz non-decision-making will involve the constriction or containment of decision-making so as to be focused on safe issues by manipulating the dominant community values, myths and political institutions and procedures (Bachrach and Baratz, 1963, 632). Power is not simply the control of observable behaviour and decisions; it is also consisted in the non-observable realm of non-decisions. For Bachrach and Baratz;

A non-decision... is a decision that results in the suppression or thwarting of a latent or manifest challenge to the values and interests of the decision-maker.non-decision-making is a means by which demands for change in the existing allocation of benefits and privileges in the community can be suffocated before they are even voiced or kept covert or killed to gain access to the relevant decision-making arena or failing all these things maimed or destroyed in the decision-implementing stage of the policy process. (Bachrach and Baratz, 1970, 7, cited in Parsons, 1995, 135).

The case of environmental policy is an area where study of non-decision or inaction by policy-makers may have the potential to explain changing levels of environmental policy performance in different contexts. For Crenson, inaction by policy-makers may be studied by analysing the way in which an issue penetrates the political process in one community and fails to engage in another. Crenson takes air pollution as a case of inaction and studies different responses to the problem of air pollution different cities. According to Crenson, where cities have powerful polluters, the issue of clean air is unlikely to emerge. Although decision-making may be pluralistic and fragmented, non-decision-making inhibited a high degree of unity. (Crenson 1971, 179 cited in Parsons, 1995 139). It is likely that if the community is committed to jobs and economic development or arresting decline the direction of the agendas will be framed in such a way as to downplay or ignore the environmental costs. In this context, the agenda is not random, but highly ordered. (Parsons 1995, 141)

The problem of inaction and manufacture of inaction through scepticism and lack of evidence is a major problem in the case of climate change, too. Lack of evidence that drives the struggle against climate change towards inaction was well documented in a number of studies (Monbiot, 2007; Oreskes & Conway, 2012). This issue is also documented in a paper that addresses the relationship between the Conservative think tanks and environmental scepticism. It was argued in the paper that scepticism is a tactic of an elite-driven counter-movement designed to combat environmentalism, and that

the successful use of this tactic has contributed to the weakening of US commitment to environmental protection (Jacques, Dunlap and Freeman, 2008).

In short, selective use and framing of evidence is an act of power. Lack of evidence due to lack of a proper monitoring system is an act of power too. In the first case you have relevant evidence, but actors try to influence the whole process through selective use and framing of evidence. If you don't have data, that means you don't have reliable evidence and overall lack of evidence deters the problem definition stage and gives the issue of air pollution a secondary position compared to other supposedly more prominent issues. Air pollution becomes a non-issue. In this context power struggle moves to a step back and focuses on the data collection and monitoring phase, and focuses on "which variable needs to be monitored"? This is also related to wider concerns on which issues are safe issues, and in some occasions it may reach to the levels where the publication of already existing data could be prohibited for the sake of public interest and prevent unnecessary panic. This is also related to the issue of transparency and access to the environmental data and in this context, the Turkish case can be explained with reference to politics of evidence where there is a certain struggle over the control of data (and evidence) from the outset.

3. Development of Legal and Institutional Framework for Clean Air Policies in Turkey

From a historical point of view, urban and industrial air pollution problems have been the first range of environmental problems that attracted the attention of public at large by the end of 1960s and early 1970s in Turkey. In 1980 air pollution became a widespread problem in many cities especially in winter, due to rapid urbanisation, increasing population and industrial development. In this process, domestic heating, transport and industrial pollution have been responsible of rising levels of air pollution particularly in cities and industrial regions and 1980s and 1990s had witnessed a significant increase in air pollution.

In 1978 Undersecretary for Environment was founded and attached to a Secretary of State. However, introduction of a legal and institutional framework for clean air policies took almost ten years. The Environment Law of 1983 was a framework document and Turkish governments introduced several by-laws to operationalise that framework law. By-Law on Protection of Air Quality was introduced in 1986, (Issued in Official Gazette, dated November 2, 1986 and numbered 19269) and then modified several times. Turkey's efforts for EU membership have also contributed the harmonisation of Turkish environmental legislation with the EU aquis. For this purpose, a number of new by laws were introduced in 2000s through adopting EU directives on environmental policy.

As it was pointed out in EEA Reports, the transposition of Ambient Air Quality Framework Directive (96/62/EC) and related Directives (99/30/EC, 2000/69/EC, 2002/3/EC, 2004/107/EC) into national legislation was completed on June 06, 2008 by the publication of the By-law on Ambient Air Quality Assessment and Management (Official Gazette: 06 June 2008, no 26898). It was argued that the new By-law is fully in line with the EU Directives on clean air. The By-law included the implementation calendar for thirteen different pollutants defined in the framework directive and other directives. The By-law also covers necessary instruments such as clean air and action plans to improve air quality, while aiming at monitoring, sanctioning and institutional strengthening in the field of air pollution control and air quality (EEA 2010).

Overall, there is a legal and institutional framework for environmental policy and there is a certain degree of progress concerning air pollution abatement strategies in Turkey. This is especially evident in certain urban centres where major pollution figures demonstrate the improvement of air quality, especially SO₂ and PM₁₀ levels, thanks to introduction of natural gas for domestic heating and industry, as well as other measures taken by the authorities (Orhan, 2004). However, there are a number of problems concerning air pollution. Because, air pollution levels in industrial cities and in some big cities are still high and certain pollutants are not measured at all. Obviously one cannot manage thirteen different pollutants without measuring them in a proper manner.

4. Problem Areas with Measurements, Non Issues without Measurements

Although there are some improvements concerning the levels of SO₂ and PM₁₀, air pollution is a major environmental problem in Turkey, especially in urban and industrial regions. The state of air pollution problem is widely documented in EU Progress Reports, OECD Reports and EEA Reports. According to recent EEA figures Turkey is mentioned among the countries with highest PM₁₀ values in Europe and SO₂ emissions reported to be one of the highest in Europe, too, a level well exceeded the levels that threatens plants. (EEA, 2011: 19, 49).

The impact of air pollution is also documented in a number of studies that link between the air pollution and concomitant health problems. Air pollution is a very well established source of respiratory health problems. The correlation between higher levels of air pollution and rises in health problems were well documented in Turkish cities (Evyapan, 2009). One of the problem areas is ground level ozone pollution stemming from emissions of nitrogen oxides and volatile organic compounds. Independent studies confirm the relationship between the high ozone levels and its negative impact on the human health and vegetation (Öztürk ve Yıldırım, 2004, 125). The higher levels of ozone are observed in big cities like Istanbul, especially in summer months during traffic rush hours and higher temperatures (Tozsın, 2003).

Despite those critical assessments from international organisations, Turkish authorities present an optimistic assessment arguing that air quality is very good, good or sufficient with respect to PM₁₀ and SO₂ levels (ÇŞB, 2011: 42-43). Since Turkey's standards and limit values are far lower than EUs (ÇOB, 2010a: 3), already existing pollution levels were presented as figures within the confines of legal limits. Authorities tend to deny problems of air pollution concerning PM₁₀ and SO₂. Despite some improvements in SO₂ levels, problems of air quality linger on. In fact, problem is far more critical since Turkey's systematic pollution monitoring system is limited to two major polluters. Turkey does not have a systematic measurement, monitoring, evaluation and reporting system on other pollutants. Thus, Turkey's name doesn't appear in the list of other pollutants (EEA, 2011: 75). Heavy metals and other pollutants are out of discussion and monitoring only certain pollutants, thus, results in a partial understanding on the state of air quality in Turkey.

In fact, Turkish environmental policy has developed a number of deficiencies since its inception. Along with problems of policy integration, limited financial resources allocated to environmental protection and deficiencies in policy implementation, lack of relevant data has been a major problem and subject to a number of criticisms (UNDP, p.4). For example, an OECD Report was recommended Turkish authorities to "improve environmental information systems (periodic reporting on the state of the environment, environmental indicators and environmental expenditure) so that they can provide for

the needs of policy design and raise environmental awareness in all sectors of society and improve access to environmental information and increase public participation in decision-making relating the environment (OECD)."

Another OECD Assessment recommends Turkey to establish and improve procedures to calculate and publish periodic emission inventories at national level for a range of pollutants, including SO_x, NO_x, VOCs and particulates and extend the national air quality monitoring system in industrial as well as urban areas, and increase the number of pollutants monitored to include, in particular, NO_x, ozone, and lead and other heavy metals. The assessment recommends Turkey to upgrade standards of air pollution, strengthen implementation procedures with an implementation schedule, and focus on both stationary and non-stationary sources of air pollution with a perspective for improving energy efficiency, through encouraging use of cleaner fuels and alternative energies (OECD, 2008).

These recommendations reflect the vitality of environmental information and environmental information systems in almost every stage of environmental policy. For the moment there are a number of efforts in establishing a network of air pollution monitoring stations and making pollution data available through internet. The Ministry of Environment and Forestry, now named Ministry of Environment and Urbanisation, had established monitoring stations in 81 provinces. Besides, monitoring stations operated by local governments, Ministry of Health and industrial districts are also included to the network and the hourly measurements of pollutants were transmitted through GSM modems and made available for the public through internet.¹ The air quality data is also published monthly and annually.

As of December 31, 2012, there are 123 stations in clean air network and there is accurate information from 121 stations. Although there is one station in every province, those stations are mainly located in provincial city centres and they measure SO₂ and PM₁₀ concentrations. Almost all stations measure sulphur dioxide (SO₂) and particle matter (PM₁₀) parameters. In certain stations nitrogen oxides (NO, NO₂, NO_x), carbon monoxides (CO) ve ozone (O₃) are also measured. To give a detailed description, 114 stations measure PM₁₀ and 119 stations measure SO₂, most widely measured pollutants, however, only 25 stations measure NO, NO₂, NO_x emissions, O₃ is measured only in 13 stations and CO is measured only in 19 monitoring stations. There are three mobile measurement stations made available to monitor air pollution in parallel to requests from provinces and towns.² In addition, various universities occasionally measure ambient concentrations of specific air pollutants such as ozone or heavy metals. Generally speaking, comprehensive information on air quality is limited to SO₂ and particulates and to certain urban centres where these pollutants are measured regularly.

Turkish government, in collaboration with German government, initiated a new air pollution monitoring programme for Marmara Region, the most populated, urbanised, industrialised and polluted region of Turkey. Thirty nine new stations were planned to be built both in urban and rural areas and integrated into clean air network. This initiative is an EU Twinning project that aims to develop a network of stations to monitor air quality that will be a model for the rest of the country.

¹ Measurements could be followed from the web site of the network, www.havaizleme.gov.tr

² <http://www.havaizleme.gov.tr/Default.ltr.aspx>

Overall, Turkey's air pollution problems sustain and this paper argues that part of the problem stems from insufficient environmental information systems and of relevant pollution monitoring systems. However, this deficiency provides only a partial explanation and we cannot establish causality between the problems of reliable environmental information and air pollution problem in Turkey. Thinking about causality needs a comprehensive account of events and we should also discuss reasons behind the lack of reliable environmental information in Turkey, and this effort requires developing an understanding of ideas that shaped the decision process.

Table 1. National Air Quality Monitoring Network – Monitoring Stations

Ministry of Environment and Urbanisation	36 Stations (2005) 45 Stations (2007) 3 Mobile Stations (2005) 1 Station Hatay İskenderun (2010) 8 Stations in Ankara, established by Ministry of Health (2008) and transferred to the Ministry of Environment and Forestry in 2009 10 Stations established by provincial directorates in between 2005-2008.
İstanbul Metropolitan Municipality	10 Stations (2007)
İzmir Metropolitan Municipality	7 Stations (2007-2008-2011)
Dilovası OSB	1 Station (2007)
Çanakkale İÇDAŞ A.Ş	1 Station (2010)
Bursa Metropolitan Municipality	2 Stations (2011)
Karadeniz Ereğli Municipality	1 Station (2011)

5. Turkey's Experience with Environmental Information on Air Pollution: Inaction/Non Decision?

Turkey's problems concerning air pollution linger on despite all those efforts concerning air pollution abatement and a part of air pollution problem stems from insufficient environmental information and pollution monitoring systems. Then why Turkish authorities do not pay enough attention to development of environmental information systems? In fact, it is rather difficult to find out reasons behind this attitude. One need to conduct interviews with policy actors involved in this inaction in a forty years time span.

Alternatively, we could refer to official reports and there are some references to problems of measurement and monitoring. For instance Turkey's problem of establishing a monitoring network and developing inventories for air quality in line with its commitments to Convention on Long Range Transboundary Air Pollution (LRTAP) has been a critical issue. According to OECD, although Turkey is a party to LRTAP since 1983, has not fulfilled data monitoring and reporting activities. (OECD, 2008: 33). Although Turkey pays attention to OECD's environmental programs, is not a party to other protocols of the regime. Turkey is not a party to Aarhus Convention either.

In a TUBITAK Report, it was argued that "although Turkey supports all protocols on protecting human and environmental health, technical problems, insufficient infrastructure and economic crises and bottlenecks deter Turkey from completing

environmental investments. Lack of environmental inventories on emissions of substances mentioned in protocols makes comparisons with stipulated limit values impossible, too.” (TÜBİTAK, 2002: 21-22). Thus it is almost impossible to define problem and transfer data in a proper manner.

Turkey’s problems with reliable environmental information could be explained with reference to a number of variables. Turkish governments’ attitude to environmental problems has always been ad-hoc and reactive in character and economic motives kept having a priority over environmental concerns. Thus, solving environmental problems has not been in the priority list of governments and environmental policies have not been designed and implemented in a comprehensive manner to solve environmental problems. Excuses like bottlenecks and economic crisis can be interpreted as delaying tactics.

The ideology of developmentalism and the logic of capital accumulation have been the main reason behind the inaction and non decisions of Turkish governments. Especially developmentalism has been an integral part of dominant political discourse in Turkey. Already existing ideas about development which measures development in terms of economic development and industrialisation and considered economic development and environmental protection in opposition to each other, and always prioritised economic concerns over the environmental concerns hindered the institutionalisation of new policy ideas like sustainable development and ecological modernisation (Orhan, 2007).

Along with developmentalism, developed countries’ historical burden on pollution has been a reference point for Turkish politicians since 1973 when environmental problems were first introduced in a government programme. It is common to hear comments like “Since developed countries polluted the earth in their development process, we have the right to pollute as much as they did.” Although those arguments stem from “common but differentiated responsibilities” Turkish authorities refrain from any responsibility concerning air pollution or global climate change (Orhan, 2012).

For a certain period, Turkey’s per capita pollution levels have been far more below the developed countries and this situation somehow legitimised Turkey’s attitude to environmental problems. Yet again Turkey is a major polluter with increasing rates of emissions, having an inefficient energy consumption pattern with lower levels GNP per capita compared to the levels of energy consumed. Furthermore, Turkey’s air pollution levels are above the limits envisaged by the EU (EEA, 2011, 19 & 49).

In this context, problems concerning secrecy and lack of transparency also deserve attention. Governments’ have a secretive behaviour concerning environmental information. This is manifested in a number of ways and not only limited to Turkey’s attitude towards Aarhus Convention. Although the Ministry of Health had been monitoring PM and SO₂ levels in provincial centres since 1984, those results were not made available for public until 1991, when Turkey’s State Institute of Statistics started to publish pollution figures regularly. According to some commentators it was the personal relationship between the Health Secretary and SIS Director that made this move possible.³

³ The author of this paper has a personal account of difficulties in getting a three-dimensional graph on air pollution of Ankara, for his research, from Refik Saydam Institute of Public Health. Ironically, the graph was published in a booklet distributed to public.

Problems concerning dissemination of environmental information and censorship efforts are still at work. In 1986, public authorities simply misled people on radioactive pollution levels in tea, hazelnuts, dairy products and other foodstuffs following the Chernobyl incident. There was almost no transparency about the issue of public health. Authorities risked the health of people instead of creating a panic situation in public. They tried to legitimise their policies with reference to 500 years old state tradition of the country (Somersan, 1993: 201-206; Otan, 1995: 13).

For the moment, as it was mentioned above, raw pollution data from stations are publicly available in an online manner and government authorities demonstrate their concern arguing that Clean Air Network will be extended in the near future. A recent circular issued by the Prime Minister Erdoğan initiated a new Board of Air Emissions to oversee and coordinate efforts towards establishing air quality inventories and ensure cooperation among responsible authorities. This move, along with development of a clean air network in Marmara Region may provoke a wave of optimism for the changing attitude of Turkish governments.

In this context, EU emerges as an important intervening factor, a push from above, which stimulates policy change towards clean air policies. There is a perspective developed in parallel to Turkey's ambitions towards being a full member of the EU and a smooth transition towards 2019 to 2024 was planned. As it was the case in the past, Germany supported efforts in developing Clean Air Policies and establishing monitoring systems, this time in the form of a Twinning Project. The Project developed for the Marmara Region planned to be a show case, or pilot Project for the other regions. Although, Secretary of Environment and Urbanisation, promises 211 new monitoring stations for the country as a whole⁴, I recommend a cautious approach to the issue.

Because, having environmental data is not a sufficient factor to solve environmental problems. It is a necessary yet not a sufficient condition. Whether environmental data will be used, misused or unused depends on a number of conditions. In some occasions use of environmental data may risk your career as a scientist, or academic researcher. Scientists face harassment for disseminating environmental data and informing people on negative effects of pollution on human health in Turkey. The case of Prof. Dr. Onur Hamzaoglu illustrates the politics of denial against findings of scientists and Turkish governments' attitudes to environmental data and use of environmental data in policy-making. Although there have been several academic studies that found higher rates of cancers in Dilovası, a heavily polluted industrial area in Marmara Region, and even a Parliamentary Investigation was carried out in the region, Dr. Hamzaoglu faced a campaign of denial when he shared the results of his latest study on Dilovası. Upon plans of a fourth steel plant in the region, he stated in an interview that heavy metals were found in air and in the colostrums of lactating women and meconium of their infants. Local authorities and the Ministry of Health were unhappy with this interview. For the moment, there are several law suits brought against Dr. Hamzaoglu with charges ranging from "creating panic situation in the public" to "misinforming the public with the 'findings' of yet uncompleted survey." (Terzi, 2012, 96-98). Environmental data will be disseminated as long as there is not a clear link between the environmental indicators and its effects on environmental quality or health as such. Environmental data

⁴ http://konut.milliyet.com.tr/bakanlik_temiz_hava_icin_harekete_gecti-konut-insaat-1598766.html

will be disseminated as long as it does not influence public opinion on risks associated with new investments and does not pose a threat to further economic expansion.

I argue that air pollution is not in government's priority list as it was in the past, but, there are certain intervening factors. International and domestic pressures on government have been influential as in the case of other countries. External pressures and Turkey's commitments at the international level play a decisive role in this process.

I further argue that air pollution will continue to be a non-issue in Turkish environmental politics and policy, because solutions require comprehensive efforts and environmental policy integration in the real sense, not in the form of paying lip service to environmental problems, is indeed a difficult task. Possibly, it has something to do with planning and policy integration. Because air pollution abatement and clean air policies have a very complex nature and involves a number of non-point, mobile and stationary polluters, and in a constant interaction with a number of policy sectors, policy integration for air pollution is indeed a difficult task. Although, environmental policy integration has been a difficult task in almost every context, and has serious problems in Turkish (Orhan, 2004 & 2010) there is a certain attitude concerning measurement and planning in Turkey, too. For some commentators it has something to do with cultural problem of fatalism (Akbulut, 2002). Yet again, as I argued somewhere else, Turkish authorities could integrate policies in a perfect manner, but not in the name of environmental policy integration, economic policy integration through subordinating other concerns to economic concerns (Orhan, 2010).

Conclusions

The role of evidence in policy making and implementation is a matter of fact, and the use of evidence and politics of evidence deserves a closed scrutiny. In this context, data collection is also a part of politics of evidence because it is about determining which parameters to follow and use, misuse or disuse of evidence, and these overall determine the rest of the game with a certain power in determining losers and winners.

In this paper, the politics of evidence has been discussed with reference to air pollution monitoring systems in Turkey. Generally speaking, Turkey's efforts for air pollution abatement provide mixed evidence on the process. There are some improvements in the past thirty years and mounting problems on air pollution have been eased thanks to introduction of natural gas and a number of other measures. However, air pollution problem has not been solved and the magnitude of air pollution problem has not been very well documented due to limited coverage of monitoring stations and their capacity concerning the number of pollutants they measure. Insufficiency and limited capacity of pollution monitoring mechanisms in Turkey and slow progress in development of those mechanisms were taken as evidence of inaction and non-decision. Inaction is taken as a deliberate policy and argued that lack of evidence also counts as an instrument of power. Because scientific ambiguity or lack of evidence is used as an instrument of power to preserve status quo and contributed to sustenance of environmental problems, like air pollution, with an extra effect on every stage of policy process.

Of course this was a hypothesis that deserves to be tested. As it was outlined in the main text, the ideology of developmentalism and dominant environmental policy discourses do not prioritise environmental protection compared to economic growth objectives. Turkish governments, through employing "common but differentiated responsibilities" argument, postpone their responsibilities concerning pollution control and are not in a hurry to establish effective mechanisms or pollution monitoring. Those discourses

surrounding the public authorities in Turkey shape the way they handle problems and develop solutions. Furthermore, attitudes to environmental policy integration and planning in general should also taken into account as evidence in this case.

What if Turkey had the proper infrastructure to measure and monitor pollution levels in an effective manner? Of course this will be a speculative comment and has the risk of developing a counterfactual argument. However, the treatment of Prof. Dr. Onur Hamzaoglu, along with other cases of secrecy, illustrates the attitude of authorities in Turkey. The pollution figures may be open to public and could be shared in an on-line manner. However, if you establish a cause-effect relationship between the levels of pollution and health problems or mention risks associated with potential industrial developments, then you're under risk of facing investigations and harassment.

Overall, by focusing on problems in air quality monitoring systems in Turkey, the paper demonstrated that lack of a sufficient data gathering system is itself a sign of inaction or non-decision. Inaction and non-decisions are generic features of environmental policy. There are highly ordered priorities in Turkish environmental politics and policy and lack of evidence serves as an instrument of power. Scientific ambiguity and lack of evidence are used as instruments of power in sidelining environmental concerns and achieving economic development objectives. Insistence on this attitude contributes to sustenance of environmental problems, like air pollution. However, environmental policy and politics is a very dynamic sphere. A combination of pressures from above, international actors and from below, domestic actors, will determine the direction of new moves of government. It is all about the politics of environmental policy, at the end.

Bibliography:

Akbulut, Ö. (2002) "Türkiye’de Planlama Kültürü Üzerine Bir Deneme", *Amme İdaresi Dergisi*, Cilt: 35, Sayı: 1, 29-54.

Bachrach, P.S. and M.S. Baratz (1963) "Decisions and non-decisions: an analytical framework" *American Political Science Review*, 57, 632-642.

Bachrach, P.S. and M.S. Baratz (1970) *Power and Poverty, Theory and Practice*, New York, Oxford University Press.

Bardach, E. (2005) *A Practical Guide for Policy Analysis: The Eightfold Path to More Effective Problem Solving*, Washington D.C. CQ Press.

Çevre ve Orman Bakanlığı (ÇOB) (2010a). Temiz Hava Eylem Planı (2010–2013) Ankara, Çevre ve Orman Bakanlığı, Çevre Yönetimi Genel Müdürlüğü.

Çevre ve Şehircilik Bakanlığı (ÇŞB) (2011). Çevre Yönetimi Genel Müdürlüğü Sunuşu.

Accessed: December 19, 2011

<http://www.cygm.gov.tr/CYGM/Files/CYGMDemoSNM.pdf>

Crenson, M. A. (1971). *The un-politics of air pollution: a study of non-decisionmaking in the cities*, Baltimore: Johns Hopkins Press.

Dunn, W. N. (2004) *Public Policy Analysis: An Introduction*, Upper Saddle River, NJ, Pearson&Prentice Hall.

EEA 2010 Country Outlook Turkey http://www.eea.europa.eu/soer/countries/tr/soertopic_view?topic=air%20pollution

European Environmental Agency (EEA) (2011) *Air Quality in Europe - 2011 Report*, Copenhagen , EEA.

Evyapan, Fatma (2009) "Air Pollution in the World and in Turkey" *Türk Toraks Derneği 12. Yıllık Kongresi* <http://www.toraks.org.tr/SunuMerkezi/?s=222B28355B3D5B395D>
Accessed September 20, 2012.

Jacques,P.J., R.E.Dunlap and M. Freeman (2008) "The organisation of denial: Conservative think tanks and environmental scepticism" *Environmental Politics* Volume 17, Issue 3, pp.349-385.

Lasswell, H.D. (1951) "The Policy Orientation" in *The Policy Sciences* eds. D. Lerner and H.D. Lasswell (Stanford: Stanford University Press) 3-15.

Marmara Bölgesinde Hava Kalitesi Alanında Kurumsal Yapılandırma Eşleştirme Projesi TR/2007/IB/EN/02 Hava Kalitesi Değerlendirme Raporu 2010 (2011) available from http://hava.cevreorman.gov.tr/hava/Files/Documents/Reports/Marmara_Degerlendirme_Raporu/Assessment_Report_TR_29_Sep_2011_final.pdf Eds: Gunnar Benter, Dagmar Gömer, Bernd Heits, Wolfgang J. Müller, Wolfgang Spangl, Ebru Çelik, Hursat Yücel,

McConnell, A. (2010) *Understanding Policy Success: Rethinking Public Policy* (Basingstoke, Palgrave-McMillan).

Milliyet (2012) "Bakanlık Temiz Hava İçin Harekete Geçti" September 19, 2012 available from <http://konut.milliyet.com.tr/bakanlik_temiz_hava_icin_harekete_gecti-konut-insaat-1598766.html> Accessed September 19, 2012.

Monbiot, George (2007) *Heat: How to Stop the Planet Burning* (Penguin)

OECD (2008). *OECD Çevresel Performans İncelemeleri: Türkiye*, Ankara: OECD ve T.C Çevre ve Orman Bakanlığı.

OECD *Environmental Country Reviews: Turkey*

<http://www.oecd.org/env/environmentalcountryreviews/2452088.pdf>

Oreskes, Naomi and Erik M. Conway (2012) *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming* (London: Bloosbury).

Orhan, Gökhan (2012) "Hava Kirliliği ve Asit Yağmurları: Uzun Menzilli Sınırlar Ötesi Hava Kirliliği Sızlaşması ve Protokolleri Karşısında Türkiye'nin Konumu" *Marmara Avrupa Araştırmaları Dergisi* 20:1 123-150.

Orhan, G. (2010) "Reorganisation of Environmental Bureaucracy in Turkey: Strategies for Policy Integration or Sustaining Business as Usual" *2010 Berlin Conference: Social Dimensions of Environmental Change and Governance*, 8-9 October 2010 Freie Universität Berlin.

Orhan, G. (2007). Institutions and Ideas in the Institutionalisation of Turkish Environmental Policy" *Critical Policy Analysis* Vol.1 No.1, 42-61.

Orhan, Gökhan (2004) "Centralised Regulation, Involvement of Local People, Leadership of Key Policy Actors or All? Conditions of Successful Environmental Policy Integration in Turkey" *2004 Berlin Conference on the Human Dimension of Global Environmental Change: Greening of Policies - Policy Integration and Interlinkages*, Berlin.

Otan, Ü. (1995) *Çaynobil* (İzmir, İzmir Kitaplığı).

Öztürk, M. and Yıldırım, U. (2004). Kentsel Bölgelerde Ozon Kirliliği: İstanbul Örneği. Mehmet C. Marın and Uğur Yıldırım (Eds.) *Çevre Sorunlarına Çağdaş Yaklaşımlar: Ekolojik, Ekonomik, Politik ve Yönetmelik Perspektifler* İstanbul: Beta, 125-146.

Parsons, W. (1995) *Public Policy*, Cheltenham, UK, Edward Elgar.

Somersan, S. (1993) *Türkiye'de Çevre ve Siyaset* (İstanbul: Metis Yayınları)

Terzi, Cem (2012) "Turkey's Selikoff" *International Journal of Occupational and Environmental Health* 18:2 pp.96-98.

Tozsın, G. (2003). “Yer Seviyesi Ozon Kirliliğine Neden Olan Parametrelerin İstanbul İli İçin İncelenmesi” Unpublished MA Thesis, İstanbul: Yıldız Teknik Üniversitesi FBE Çevre Mühendisliği ABD.

TUBİTAK (2002) Vizyon 2023: Bilim ve Teknoloji Stratejileri, Teknoloji Öngörü Projesi, Çevre ve Sürdürülebilir Kalkınma Paneli, Uluslararası Sözleşmeler Ön Rapor Accessed: September,20 2011 http://www.tubitak.gov.tr/tubitak_content_files/vizyon2023/csk/EK-8.pdf

UNDP Terms of Reference (ToR) for International Sector Specialist to Support the Thematic Task Force on SCIENCE & TECHNOLOGY PRODUCTION (Ref: UNDP-SD-ISS-ST)